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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,199	09/29/2004	Toshiyuki Nagase	09852/0201900-US0	6445
7278	7590	10/14/2005	EXAMINER	
DARBY & DARBY P.C. P. O. BOX 5257 NEW YORK, NY 10150-5257			LAM, CATHY FONG FONG	
			ART UNIT	PAPER NUMBER
			1775	

DATE MAILED: 10/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/510,199	NAGASE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Cathy Lam	1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_ is/are allowed.
- 6) Claim(s) 1,3-6,8,10 and 11 is/are rejected.
- 7) Claim(s) 2,7 and 9 is/are objected to.
- 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 29 September 2005 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. ____.
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>9-29, 11-08-2004</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: ____.

***Claim Rejections - 35 USC § 112***

1. Claims 3 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 3 & 9, the limitation "conductive layers are rolled with a draft of at least 15%" is vague and indefinite. Clarification is required.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 4-6, 8, 10-11 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Nagase et al (US 6033787).

Nagase discloses a heat sink that is bonded to a ceramic circuit board.

The ceramic circuit board (50) is comprised of a ceramic substrate (13), a first and a second aluminum plates (51,52) and Al-Si based brazing solder layers.

The first and second aluminum plates are respectively formed onto the surfaces of the ceramic substrate (13) via the Al-Si based brazing solder layers. A heat sink is bonded to either the first or second aluminum plate via a soft solder material (56) (col 5 L 59-col 6 L 5).

The aluminum plates are made of Al with at least 99.98 % by weight purity; the ceramic substrate can be one of AlN, Si<sub>3</sub>N<sub>4</sub> and Al<sub>2</sub>O<sub>3</sub> (col 6 L 31-32).

The assembly of such multilayer arrangement is subjected to a pressure of 0.5-5 kgf/cm<sup>2</sup> (i.e. 49-490 kPa) in 600-630°C in a vacuum (col 6 L 5-7).

Nagase is silent about an average or maximum crystal grain diameter and standard deviation of the crystal grain diameter. However, the examiner takes the position that the crystal grain diameter and the standard deviation are inherent properties since the prior art teaches the same aluminum material (i.e. at least 99.98% by weight).

The examiner also takes the position that the soft solder material (56) has a lower melting temperature than the Al-Si or aluminum based brazing material, since Pb-Sn solder is a conventional low temperature solder material.

#### ***Double Patenting***

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1, 5, 6, 10-11 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-2, 5-7 and 9 of U.S. Patent No. 6,033,787. Although the conflicting claims are not identical, they are

not patentably distinct from each other because they are structurally and materially the same.

6. Claims 1, 5-6, 10-11 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-4 of copending Application No. 10/343,857. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are structurally and materially the same.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Allowable Subject Matter***

7. Claims 2, 7 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if incorporate into independent claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lam whose telephone number is (571) 272-1538. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Cathy Lam  
Primary Examiner  
Art Unit 1775

cfl  
October 12, 2005